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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Arkady Borkovsky

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EXAMINER

LIN, SHEW FEN

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,970	<b>Applicant(s)</b> BORKOVSKY ET AL.	
	<b>Examiner</b> SHEW-FEN LIN	<b>Art Unit</b> 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,7-11 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-11 and 17-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

- a. This action is taken to response to Request for Continued Examination filed on 3/31/2009.
- b. Claims 1, 7-11, and 17-26 are pending in this Office Action. Claims 1 and 11 are independent claims.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 31, 2009 has been entered.

#### ***Response to Amendments***

In view of the amendment to claims 1 and 11, the Examiner withdraws the claim objection stated in the previous office action.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 7, 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ortega et al. (US Patent 6,401,084, hereinafter Ortega) in view of Gravano et al. (US Patent 7,146,358, hereinafter Gravano).

**As to Claim 1**, Ortega discloses **a method for generating a list of candidate alternative spellings** (col. 2, line 63 to col. 3, line 3, similar in spelling to the non-matching term to be deemed a candidate correctly-spelled replacement term for the non-matching term), **comprising:**

**finding, among a plurality of pages, a first page that contains, in a body of the first page, a first spelling that is also contained in a query that was entered by a user, wherein said link links to a second page [see below];**

**comparing the first spelling with the spelling of terms** (col. 5, lines 1-6, comparing the spellings of such related terms to the spelling(s) of the non-matching term), **within said second page** [taught by Gravano, see below] , **in order to identify spelling that are** (col. 3, lines 38-41, identify search terms that are related to the correctly spelled search term(s) of the query, and evaluating whether any of these related terms has a similar spelling to the misspelled search term(s))**similar to, but not exactly the same as, said first spelling** (abstract, col. 3, lines 38-41, A spelling comparison function is then used to determine whether any of these related terms is sufficiently similar in spelling to the non-matching term to be deemed a candidate correctly-spelled replacement);

**adding, to a list of candidate alternative spellings of said first spelling, all spellings within said second page** (col. 5, lines 1-2, a search term correlation table) **that are spelled similar to , but not exactly the same as said first spelling** (col. 2, lines 21-30, col. 5, lines 36-43, col. 9, lines 11-12, prompted to select the replacement term(s) from a list of candidate replacement terms);

**generating a filtered list** (col. 2, lines 8-11, a "related terms" list, wherein the related terms list is composed of the terms that have appeared in combination with the keyword with the highest degree of frequency, col. 3, lines 38-41, col. 6, lines 47-50, col. 9, lines 17-23, col. 9, line 64 to col. 10, line 5, filter out the non-field-corresponding terms and related terms fail to satisfy the similarity test) **at least in part by filtering said list of candidate alternative spellings based on a comparison of (a) a first frequency of occurrences of said first spelling in said plurality of pages** (col. 8, lines 41-42, the number of items found is zero [first frequency]) **to (b) a second frequency of occurrences in said plurality of pages, of a second spelling from said**

**list of candidate alternative spellings** (Fig. 3, Fig. 6, 110, col. 11, lines 32-33,  
ITEMS\_FOUND>0 [second frequency] )

**storing said filtered list of candidate alternative spellings on a computer-readable  
storage medium** (Fig. 3, col. 8, lines 11-13, stored in RAM);

**wherein the steps of comparing, adding, and generating are performed by one or  
more computing devices** (Fig. 1).

Ortega discloses **finding, among a plurality of pages** (col. 3, lines 50-53, col. 4, lines 43-46, locating items), **a first spelling that is also contained in a query that was entered by a user** (abstract, Fig. 4, 70, 72, a multiple-term search query that includes a non-matching term [first spelling]) but does not explicitly disclose **a first page that contains, in a body of the first page, a link that indicates a first spelling that is also contained in a query that was entered by a user, wherein said link links to a second page and searching within said second page.**

Gravano discloses **finding, among a plurality of pages** (Fig. 4), **a first page** (Fig. 4, 410) **that contains, in a body of the first page** (Fig. 4, 412, 414), **a link that indicates a first spelling that is also contained in a query that was entered by a user** (Fig. 5, col. 2, lines 3-5, search documents to locate one or more documents that contains anchor text that matches query term), **wherein said link links to a second page** (Fig. 5, 530, 540, col. 2, lines 6-8); **searching, within said second page, for any spellings that satisfy particular criteria** (abstract, Fig. 5, 540, 560, col. 2, lines 11-14, using the identified documents [said second file] to identify one of the possible translations as a likely translation of the search query, col. 6, lines 15-21, several possible translations for anchor text to be searched/matched).

It would have been obvious to a person of ordinary skill in the art at the time of invention was made to modify Ortega's disclosure to use second document to disambiguate among the possible translations of the terms of the search query and identify one of the possible translations of search query (Gravano, col. 1, lines 55-65). The skilled artisan would have been motivated to improve the invention of Ortega per the above to provide an effective suggestion tool.

**As to Claim 7**, Ortega discloses the method of claim 1, wherein said first spelling comprises multiple words and wherein said second spelling comprises multiple words (Fig. 3, col. 4, lines 63-64, a multiple -term search query that includes both matching and non-matching terms, col. 5, lines 7-18, "Java APPI", "Java API").

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**As to claim 11**, is directed to a computer readable storage medium carrying instructions for performing the methods of claim 1 and rejected along the same rationale.

**As to claim 17**, is directed to a computer readable medium carrying instructions for performing the method of claim 7 and is rejected along the same rationale.

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ortega and Gravano as applied to claim 1 above, and further in view of Bookface-ga ("Search Term Suggestion Tool available", <http://answers.google.com/answers/threadview?id=18072>, May 25, 2002).

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**As to Claim 8**, Ortega discloses the method of claim 1, but does not explicitly disclose in response to determining that said first frequency is greater than said second frequency, removing said second spelling from said list of candidate alternative spellings.

Bookface-ga discloses in response to determining that said first frequency is greater than said second frequency, removing said second spelling from said list of candidate alternative spellings (page 1, to see first if there are not many results from the indexed list of words for each term in the query [interpreted as a first frequency of occurrences], and then secondly if there are a LOT of results for a word [interpreted as a second frequency of occurrences], automatically forward to the suggested spelling link, i.e. only add second spelling with frequency higher than first spelling to said list).

Therefore, it would have been obvious to one skilled in the art at the time of the present invention to modify the method of Ortega and Gravano by suggesting query term based on search results as taught by Bookface-ga in order to provide a better search results.

**As to claim 18**, is directed to a computer readable medium carrying instructions for performing the method of claim 8 and is rejected along the same rationale.

Claims 9-10 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ortega and Gravano as applied to claim 1 above, and further in view of Chang et al. (US Patent 7,127,450, hereinafter Chang).



**As to Claims 9-10**, Ortega and Gravano disclose the elements of claim 1 as noted above but does not explicitly disclose filtering said list of candidate alternative spellings of said first spelling based on a whether said first spelling is a plural form of said second spelling or vice versa.

Chang discloses removing plural form from query term by normalization (Fig. 2, 44). For example, the word "computers" would have the normalized form "computer" with the plural suffix removed (col. 2, lines 48-59).

It would have been obvious to one ordinary skill in the information retrieval processing art at the time of the invention to combine the teachings of the cited references because a normalize term can be used to provide effective searching, such as to identify alternative word spelling related to the term in a directory (Fig. 9, Chang). The ordinary skilled artisan would have been motivated to remove the plural form of a spelling from the list to avoid the redundancy by only including distinct term in the list.

**As to claims 19-20**, are directed to a computer readable medium carrying instructions for performing the methods of claims 9-10 respectively and are rejected along the same rationale.

**As to Claims 21**, Ortega discloses the method of Claim 1, further comprising:  
receiving, at a search engine, from said user, query terms that contain said first spelling (col. 5, lines 7-18, "APPI", see also Gravano, Fig. 6, 610).

**As to Claims 22**, Ortega discloses the method of Claim 1, further comprising:

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presenting, to said user, one or more spellings from said list (col. 5, lines 36-43, see also Gravano, Fig. 6, col. 5, lines 61-62).

**As to Claims 23**, Ortega discloses the method of Claim 1, further comprising:

conducting a search of said plurality of files based on a query in which said first spelling has been replaced by a spelling from said list but wherein query terms other than said first spelling remain as entered by said user (Fig. 4, 88, 94, col. 2, lines 21-34, col. 5, lines 36-43); and

presenting, to said user, one or more results of said search (Fig. 4, 94, col. 5, lines 31-34, the result is presented to the user, see also Gravano, Figs. 3, 6, col. 5, lines 18-34, receive a search query from a user and respond by returning relevant information or a list of relevant information to the user)

**As to claims 24-26**, are directed to a computer readable medium carrying instructions for performing the methods of claims 21-23 respectively and are rejected along the same rationale.

### ***Response to Remarks***

Applicant's amendments and remarks have been fully and carefully considered. In response, a new ground of claim analysis based on previously relied on reference has been considered, but they are not deemed to be persuasive.

Applicant argues that Ortega corrects spellings in a completely different way. Specifically, Ortega compares non-matching terms (terms that are not found in a correlation table) with terms that are related to matching terms (terms that are found in a correlation table). The Examiner respectfully disagrees.

Ortega discloses a method for predicting the correct spelling of search terms within multiple-term search queries, a table is accessed to look up a set of terms that are "related" to the matching term or terms. A spelling comparison function is then used to determine whether any of these related terms is sufficiently similar in spelling to the non-matching term to be deemed a candidate correctly-spelled replacement (abstract). Ortega clearly teaches comparing a first spelling (misspelled term) with a second page (table) to identify the terms that are similar in spelling.

Applicant further argues that Ortega fails to teach or suggest that the spelling indicated by a link in a first page is compared with the spellings of terms in a second page to which the link links. As noted above, the Examiner relies on Gravano to teach the cited limitations which have been addressed in detailed in the claim analysis section.

For at least the reasons above, all pending claims stand rejected.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shew-Fen Lin whose telephone number is 571-272-2672. The examiner can normally be reached on 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shew-Fen Lin /S. L./  
Examiner, Art Unit 2166  
May 31, 2009

/Hosain T Alam/

Supervisory Patent Examiner, Art Unit 2166